

METHOD OF PLATING FOR FILLING VIA HOLES

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ABSTRACT OF THE DISCLOSURE

A method of plating for filling via holes, in which each via hole formed in an insulation layer covering a substrate so as to expose, at its bottom, part of a conductor layer located on the substrate, is plated with copper, to be filled with the plated metal, the method comprising the steps of forming a copper film on the top surface of the insulation layer covering the substrate, and the side walls and bottoms of the respective via holes, immersing the substrate having the copper film formed in an aqueous solution containing a plating promoter to thereby deposit the plating promoter on the surface of the copper film, removing the plating promoter from the surface of the copper film located on the insulation layer and leaving the plating promoter on the side walls and bottoms of the respective via holes, and subsequently electroplating the substrate having the copper film formed with copper to thereby fill the via holes with the plated copper and simultaneously form a continuous copper film which eventually covers the via holes filled with the plated copper as well as the copper film previously formed on the insulation layer. The method is suitable for satisfactorily filling via holes, having a small diameter and a large aspect ratio, with plated copper.